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SCHOOL AND SOCIETY

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Volume XXIII | SATURDAY, JANUARY 16, 1926 | Number 577

CONTENTS

Inaugural Address: PARKE REXFORD KOLBE 57

The Recent Progress and Problems of Vocational Guidance: JOHN M. BREWER 62

Educational Events:

Tour of South African Students; Oxford Student's Comment on American University Education; Resolutions concerning the Teaching of Journalism; The American Library Association; Appropriations for the University of Minnesota; Research in the Social Sciences at Columbia University; The Annual Conference of the National Vocational Guidance Association; The Summer Quarter of Stanford University 70

Educational Notes and News 76

Special Correspondence:

The Connecticut College Course in "The Art of Living": FRANK E. MORRIS 79

Discussion:

Science Teaching in the Secondary Schools: ELLIOT R. DOWNING 80

Quotations:

The Uses of Psychology 81

Books and Literature: GRANT SHOWERMAN 82

Educational Research and Statistics:

Predicting Success in College at the Time of Entrance: J. B. JOHNSTON 82

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LANCASTER, PA. GARRISON, N. Y.

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SCHOOL AND SOCIETY

Volume XXIII | Saturday, January 16, 1926 | Number 577

INAUGURAL ADDRESS[1]

Mr. Chairman, Guests and Fellow Citizens:

Your friendly welcome, so generously extended, gives me confidence this evening to regard myself as one with you in heart and purpose. The traditional aloofness of this great metropolitan center has never tinged the kindness with which you have received me. It is therefore natural for me, sensing the great heart of Brooklyn, to assume in those present to-night the same generous concern for human progress which has hitherto marked the development of this city. If I speak specifically of things educational, it is because I believe with a former secretary of war, that "education is the main business of a democracy." I would not weary you this evening with a résumé of the details and difficulties of college administration. So deep is the existing dissatisfaction with the work and product of the American college that no mere discussion of symptoms will suffice to bring to light the underlying malady of which the academic body is sick. Besides, these symptoms have already been amply discussed. The evils of the credit hour plan, student activities, the honor system, methods of eliminating the unfit, the problem of the gifted student, lack of student interest in study—all these questions are so constantly before us that they occupy our attention to the exclusion of any concerted effort to remedy the real difficulty which underlies them all.

As a preliminary to further analysis I would repeat here the often stated and little comprehended fact that our system of higher education, in large part free to all who desire it, is a unique experiment. In this respect we stand alone among nations. No other land or people has anything at all comparable in scope or method. As a result, it may be stated from the best figures available that while Germany is educating twenty-two hundredths of one per cent. of her population in higher institutions, France, twenty hundredths and England eight hundredths, the United States is educating fifty-eight hundredths of one per cent. Numerically, the difference is even more staggering. Compared to 132,000 students in Germany, 80,000 in France and 31,000 in England the United States has 664,000 students in its colleges. The figures just given are naturally subject to the inaccuracies attendant upon the comparison of dissimilar systems of education. In the main, however, they show beyond question that this country is not only dealing with much greater numbers of students than any other country, but that it is going down much deeper into its population to recruit its college material. Please do not think that I am making these statements in disapproval of our national policy of free higher education. I believe that the education of the masses is absolutely essential to the success of the republic and I agree entirely with the resolution recently adopted by the Association of Urban Universities at Washington, which said:

Resolved, That the vast increase in the number of young people seeking collegiate and professional education is one of the most satisfactory indices of social progress in America, and it is the sense of this Association that the efforts of communities and organizations supporting institutions of higher learning should be directed to the production of adequate facilities to discover the aptitudes of all applicants and to develop them for the most serviceable careers of which they are capable.

[1] Given before the Polytechnic Institute of Brooklyn, January 13, 1926.

In a nation like ours, there can never be any serious consideration given to education for the purpose of developing an "aristocracy of brains" other than the assurance that under our free institutions each man has the opportunity to advance as far as his intelligence and industry will permit. However, no amount of misapplied democracy can conceal the fact that the human material which presents itself for entrance to our colleges is intellectually dissimilar. While European nations are accepting for higher education a chosen few, carefully picked by survival of a secondary education especially designed to prepare for the university, we have learned to regard the American high school not as a place in which to prepare people for college, but as a great popular institution for the masses from which every boy and girl is entitled to graduate. Naturally, since every high school graduate can enter *some* college, the same conception has extended itself to our whole higher educational system. This condition and this distinction we have realized but dimly and have made only unconscious efforts to correct. Nor shall we ever correct them until we admit frankly that our college entrants are not only of dissimilar mental ability and hence require different treatments, but also that they come to college with entirely different aims and purposes.

Generally speaking, they are of two types. The majority come with a desire for a general, non-intensive training. They are interested in college life, college associations and the manifest advantages which come from living in the college world. They never expect to use practically any of the information gained in the classroom, hence their thirst for much exact knowledge is, to say the least, moderate and their ability to assimilate and use it often still less. I may be speaking with brutal frankness, but I know that college teachers will agree with me up to this time at least. Here it is probable, however, that our opinions will diverge, for I believe that we should honestly admit that a large number of our college students are not capable of receiving the intensive training which we are trying to give to all and which we ought to give to the more gifted, but I do not believe that on this account they should be denied the privilege of getting the education which they are able to assimilate. We are criminally liable, however, if we allow them to be educated with the stronger students in any such way as to retard the progress of the latter. Unfortunately, that is exactly what we are doing now. In this connection we might well learn a lesson from the despised athletic trainer whose first principle it is to adapt the exercise to the individual's ability. It is even more useless and dangerous to subject a mediocre mind to the rigors of the more involved mental disciplines than it is to make a weakling play football against the varsity. It is more futile to slow down the progress of a really good mind to the class level of mediocrity than it is to condemn the great athlete to play ping pong. Until we realize, as has England in her university "honors" and "pass" degrees, that we must frankly make separate provision for talent and for mediocrity, we shall continue to be assailed by a hundred symptoms of a disordered academic body.

Many diseases produce their own antibodies and to a certain extent this has been true in the case of our afflicted college system. Some little relief has been gained by the plan of sectioning classes by ability. Most promising of all is the actual introduction of "honors" courses in many institutions. Encouraging though these indications may be, they can hardly become sufficiently inclusive to solve the problem alone. In England the proportion of "pass" to "honors" students is small. Here it would necessarily be very large, and for both classes new educational con-

ceptions and objectives will have to be formulated. There is, however, another powerful influence for separation at work which has been greatly misunderstood. I refer to the fact that certain institutions have found it physically necessary to limit their enrolment sharply. Not unnaturally they have selected from the material offered that which was superior, and not unnaturally they have been accused of fostering the dreaded "educational aristocracy." Be that as it may, there can be no doubt that there is, as a result of this, already abroad a definite tendency to differentiate institutions. For example, one college selected only 160 freshmen from 1,200 candidates. Another had, as a result of a similar selective process, nearly 300 high school honor students among its entering class of 600. Can any one really doubt that more intensive intellectual work can be done here than in a university whose legislature has decreed that every graduate of a first-grade high school may freely enter? To the impartial mind this involuntary differentiation carries no reproach for either side. He would indeed be unpatriotic and unwise who would minimize the importance of educating the masses whose franchise controls our destiny. The trust is a sacred one and devolves necessarily for the greater part upon our great public universities with their unlimited resources. But equally foolhardy is he who denies the necessity of an education for intellectual leadership, open to all who possess the ability to profit by it. When American college men frankly and honestly admit these dual natures and purposes in higher education, when they learn to regard both as necessary and honorable, then we may begin to hope for a recasting of our system and a disappearance of our present troubles.

Lest I may be accused of a supine acquiescence in the evils of the present situation, allow me to clarify my position in this respect. Assuming that some colleges will devote themselves more or less exclusively to the education of the more gifted student (as is already actually the case), the question naturally arises as to what we are to do with the less gifted or average type. Manifestly, we should continue our efforts to improve our entrance methods to the point of actually eliminating the shirkers and the mentally unfit. When this is done there will still be left a large number whom we might rate as of average intelligence. No believer in democracy can doubt that these persons are entitled to the kind of college training for which they are fitted. I would emphasize again that the present confusion and dissatisfaction result largely from their indiscriminate mixture with those more gifted. A single standard of attainment is impossible for both, and the solution lies in adapting educational content and method to the ability of the recipient and perhaps even more in trying to find for each individual the subjects in which he can do his best work.

The foregoing has been meant to apply to the so-called general type of college training. While we may contend that the average student can, with benefit to himself and the world, profit by properly adapted non-professional college education, a different situation exists in training for the learned and technical professions. We are face to face here with the fact that desire and ability are not always synonymous. The safety and progress of the individual and the race depend directly on the performance of the physician and the teacher, the chemist and the engineer. Hence no good purpose is served by the toleration of mediocrity. As a result, the standards of our best professional schools are high. Life and its enjoyment are at stake in upholding the integrity of this principle.

The chaotic condition of the American college with its lack of differentiation of training between the gifted and the average, and particularly with its increasing

liberality in the specification of subject-matter for entrance requirement, must necessarily affect adversely the discipline of the professional school. The tendency of the high school to allow the substitution of various kinds of social science, manual and business training, etc., for the older disciplines of mathematics and foreign language raises a serious problem for the engineering college. While the private institution may meet this situation in its own way, the publicly supported engineering college is often helpless. In a middle western state, the State Board of Education, acting on the advice of educational surveyors sent by a large foundation, abolished the requirement of mathematics in the high-school course, prescribing instead four years of social science. As a result, one of our great public engineering colleges located in that state was forced last year to admit nearly 100 men who were conditioned or deficient in mathematics. Naturally, the ratio of students eliminated from that institution has risen considerably. In another state similarly afflicted the land grant college has been forced to admit 227 students with conditions out of a total of 325 entering. This growing tendency to do away with definite subject prescriptions in the high school seems to me responsible for one of the most serious situations confronting the professional schools to-day, and this is especially acute for the study of engineering.

Much more encouraging is the steady increase of understanding and good feeling between technical education and industry. Less and less does the manufacturer regard the college professor as a pure theorist, and in ever decreasing measure does the latter arrogate to himself exclusively the qualities of intelligence and idealism. This has come about through earnest efforts to cooperate made by both sides. Most of these efforts have been practical and desirable, since they have been honestly based upon the desire to improve the student's training and character, and only secondarily upon any possible immediate gain to industry or college.

Whether the products of the creative mind are always adequately estimated is more doubtful. There is unquestionably a tendency to magnify the practical application and minimize pure research. Mr. Ford was recently quoted by the New York *Times* as saying: "Patents are silly things when they are used to hinder any industry. No man has a right to profit from a patent only. That produces parasites, men who are willing to lay back on their oars and do nothing. If any reward is due the man whose brain has produced something new and good, he should get it through profits from the manufacture and sale of that thing." Doubtless this is sound commercial reasoning, but there is something in the wording of the last sentence which makes one hope that Mr. Ford has been incorrectly quoted. Surely no such limitations surrounded the work of a Pasteur or the researches of a Steinmetz.

Specifically, then, the modern college of technology must have, first of all, the right to choose as entrants only those who are well prepared in the basic preliminary subjects; second, the sympathetic interest of industry in the training of its students, and third, the assurance that its graduates shall have reasonable opportunity to continue their mental development and to receive a fair measure of return for their productive effort. Its highest function and privilege however is the discovery and development of the creative intellect.

In our local situation, it is a matter of immediate concern that no other American community of even approximately comparable size is educating so small a proportion of its students in higher institutions within its own boundaries as Brooklyn. Meanwhile, great colleges and universities have grown up in other parts of the metropolitan

district and these have in part cared for Brooklyn's surplus. The feeling which has resulted in a popular demand for a University of Brooklyn is perfectly comprehensible under these circumstances. We dare not, however, lose sight of the fact that a mere formal combination of already existing institutions would have little value. A recent survey of an almost similar situation in Cleveland has shown that additional funds of many millions of dollars would be necessary to amalgamate the scattered educational units there into a real University of Cleveland. It is folly to believe that Brooklyn can build up a great private university, even with the existing material, without the provision of a great fund to make possible a program of housing and development commensurate with the borough's population and probable growth.

The Polytechnic Institute occupies a unique and most favorable position in its relation to the community and to industry. The combined registration of day session engineering students in Greater New York last year was less than 1,500. Nearly 30% of these were in attendance at our own Polytechnic Institute. With a population exceeding that of every state in the union except four, New York City educates within its own boundaries fewer men in engineering than even some of the less populous states, and even fewer than cities like Boston or Pittsburgh. This is particularly strange in view of the fact that New York has more industries to help in training engineers and in absorbing engineering graduates than any other city in the United States. This situation leaves a wide field open here. I know no other engineering college except our own Polytchnic Institute situated alone of its kind in a city or borough of over 2,000,000 people. No one, I think, can consistently question the opportunity for service here presented.

Two things condition the Institute's ability to care for more students than are allowed under its present restricted number in the day session. They are the provision of increased room and equipment, and the realization on the part of Brooklyn that the Institute is not the concern of any local section or group but the representative technical college of the entire borough. While service to a larger number will doubtless be increasingly demanded, I want to be recorded here as believing that increase in number is entirely secondary to high standards of requirement and performance. The institute can now do work of the highest grade for its present enrolment. Financially speaking, every additional student is a liability, since the cost of his education considerably exceeds his tuition payment. The number received can grow only as the people of Brooklyn are willing to capitalize the additional expense thus incurred. But aside from all considerations of finance, the efforts of the institute must be dedicated to the selection for enrolment of these men only who are willing and able to maintain a high standard of performance. The present tendency toward complexity of educational organization must be firmly resisted. Years of experiment have shown the institute its true place as a school of engineering. Beyond this we do not care to go, but every attempt should be made to find and adapt to our uses the best possible methods of training in that field. Already the faculty by individual example has led the way toward closer relations with industry. Our present problem lies in establishing similar points of contact for the student body.

This occasion would be incomplete without grateful acknowledgment to those men who have fought the good fight through the long years of the institute's formative period. The devotion of a faculty, the wisdom of an Atkinson, the faith of a corporation as typified in the long service of a White and a Nichols—all these have succeeded where once success seemed lost. And because the institute stands to-day se-

cure in the present, confident in the future, these men and their fellow workers deserve of Brooklyn a place among her benefactors.

The world is constantly developing new types from old ones. Great massing of populations is remaking our colleges in method and purpose. The engineering school is finding increasing profit in city location and in association with the world for which it prepares. No fairer place exists to-day than this amazing metropolis of ours for the building of an institute which shall lead the way in the urban field. May God give us strength and devotion to this high purpose.

PARKE REXFORD KOLBE

THE RECENT PROGRESS AND PROBLEMS OF VOCATIONAL GUIDANCE[1]

IN the Tate Gallery in London is the striking picture by Sir John Everett Millais, the "boyhood of Raleigh." A sailor is talking of the sea to two eager boys, pointing as he talks. The flavor of the environment is salt: the contact with the sailor and with the sea is genuine and concrete. Thus Sir Walter received his vocational guidance in the sixteenth century.

In the eighteenth century the elder Franklin led his son Benjamin about the streets of Boston, showing him the several opportunities and aiding him in selecting a trade. As they walked about the small city it was easy to step into the various shops to see the men at work, or, indeed, to view them from the street at benches and counters.

Coming to the twentieth century, however, vocational guidance, except for the very fortunate, is not nearly so easy. If a father attempts to show his son the occupations of to-day, what do they see? Let them walk about Harvard Square or down to Dock Square in Boston. Out of the eighty-three occupations, each having over 100,000 workers, they would see in an ordinary walk not more than eighteen, and even diligent and continued observation would disclose not more than forty. Besides, no ordinary father could tell his son the qualities of more than a very few occupations. The chief things seen in such a modern walk are high buildings, grated openings, offices, stores and show-windows. Set a sixteen-year-old boy or girl in this environment and what a distorted idea of occupational life he acquires. In the first place, he needs to learn that the workers he sees represent but a small part of all, and that two thirds of the working population earn their living with their hands. In the second place, he needs to realize that the things one sees with his eyes are the least important features of vocational life; that there are social problems and psychological factors that delineate the specifications of an occupation far more accurately than do observations of the tasks performed or the places of work.

Needful vocational facts are hidden from the wise and prudent, but they are not revealed to babes. Worse, the advertisers and the charlatans are always busy, crying the path of easy success and inviting ignorance to sign on the line. The fight with wrong methods of guidance is not the least of the important reasons why educational workers are endeavoring to supply the necessary help.

The purpose of this paper is to outline the progress of vocational guidance since the founding of the Graduate School of Education of Harvard University in 1920, to point out a number of problems requiring research and to note certain principles of guidance already discovered.

In three main directions gains have been

[1] Address at the opening reception, Graduate School of Education, Harvard University, October 16, 1925.

made since 1920: first, in providing vocational contacts for children, to aid them in the discovery of their interests and abilities; second, in organizing and extending classes in occupational information; third, in applying tests and other forms of measurement to the work of vocational guidance.

Benjamin Franklin could not choose printing merely by seeing printers at work; he had also to try some of the tasks of the printer before he could be sure of himself. The idea of "trying out" is common enough in music, dramatics, athletics, debating and other student affairs, and these activities often suggest vocational careers. But how does vocational guidance furnish the necessary contacts for the great mass of occupations?

It was natural to turn first to the manual training shops. Already the naïve conception of training the hand and eye in any general sense was being questioned. It was seen that facility in going through a set of formal exercises in woodwork can not be automatically transferred to skilled performance in tool-making, engraving, cabinet making, dentistry or photography. If it were otherwise, playing billiards might be the best plan for teaching muscular coordination. Furthermore, wood was fast losing ground as the chief material of construction. These doubts aided the demand that a diversity of useful tasks in several materials be offered.

In some junior high schools, seventh-grade boys are now given elementary exercises suggesting six groups of callings: for example, woodwork, printing, electricity, lathe work in iron, sheet metal work and automobile mechanics. These exercises are often taught by one teacher, with six groups of five boys each, rotating among the several kinds of work during the year. The expression "general shop work" has been used to describe such diversified tasks. In 1920 it would have been hard to find such a shop; in 1922 an investigator reported 569, and there is every indication that the number is rapidly increasing. In other places, courses called "home mechanics" and "farm mechanics" are organized, offering diverse tasks in home repair, and farm work of a constructive nature. What is sought is not technical skill, but rather a certain versatility on an elementary level, a preliminary exploration of interests and abilities.

In the Bureau of Vocational Guidance we have prepared an appraisal chart, on which young persons are asked to mark from a list of vocational tasks the ones in which they have had definite experience. Following are the results for two sixteen-year-old boys, John and Alexander, in the second year of a high school near Boston; note the contrast in the number of their vocational contacts, and consider the question, How can wise choice of occupation grow out of such limited experience as Alexander has had?

Of twenty-eight possible experiences with different kinds of elementary tasks in industrial work, John has had nine, Alexander three. Of twenty-four commercial tasks, John has had experience with seven, Alexander with one. Of thirty tasks of professional workers, John two, Alexander one. Aside from agriculture, the total is twenty-five experiences for John, seven for Alexander.

How is Alexander to choose an occupation wisely? Choice of one calling can not be made without conscious rejection of others. If he chooses farming, with which he has had thirteen different kinds of contacts, he may join the ranks of the farmers who are haunted all their lives with the thought that they might have done better in something else. If he chooses a professional calling, he is likely to choose without knowledge, as so many do.

The problem of furnishing vocational contacts is so new that much research is needed. First, census data on occupations must be studied, in order to determine just what experiences should be offered. Second, research is needed to determine just what combinations of exercises are economically and educationally appropriate, and to draw plans for the best layout of shops and laboratories. Third, research is needed to plan more scientifically the steps taken by the pupils: from the industrial arts of the elementary school to a variety of contacts in the general shop; from these exercises in the general shop to more definite trial experiences in two or three callings; from these trials to enrolment in the vocational school. Fourth, it is necessary to work out the relationship of these trials to classes in occupational information and to such miscellaneous working experiences as will serve to test abilities and interests. Fifth, teaching methods must be scrutinized. Sixth, tests must be constructed and applied, both as teaching devices and as measures of progress. Finally, a checking up of the later experiences of individuals is needed to suggest further modifications in the aims and methods of the work.

Self-discovery through contacts with occupational tasks is but one side of the problem; the other is the discovery of the characteristics and opportunities of vocational life. Both go on simultaneously and form the foundation for reasoned choice of calling, and for subsequent training, progress and readjustment. Discovery of the vocational world is best facilitated by providing classes in occupational information, and the spread of these classes is the second great development since 1920.

The need for such classes was early expressed and may be readily demonstrated. A boy in a neighboring technical school was being prepared to become an electrician, but for the first two years he supposed that he was being trained to become an electrical engineer. In the same school were found several boys who thought that their preparation would admit them to schools of law and medicine. Most high schools have a commercial course ostensibly and sometimes ostentatiously preparing its students for business careers. Using a test of occupational information, constructed at the bureau, we found in two suburban high schools in this region, in the senior year of the commercial curriculum, many students who had no clear ideas on the question, Which, after all, are the commercial pursuits? Of fifty-eight commercial seniors in one school, twenty-six said that the stenographer was not a commercial worker, twenty-four ruled out of commerce the commission merchant, twenty-one the merchant, nineteen the salesman, fourteen the banker and ten the cashier. Twenty-one pupils called the reporter a commercial worker, and four the teacher.

Is there any logic in enrolling children in a given curriculum, particularly a vocational one which ordinarily closes the door of opportunity in all directions except toward the pursuit of a few highly specialized callings, without first making clear just what these callings are for which the curriculum prepares? What should we say of a surgeon who operates on a patient without first making a diagnosis? The school which enrols a student in a vocational course, without first helping him to consider his aptitudes and interests and the alternative possibilities, is placing itself in a similar position.

The above mentioned test of occupational information contains samples only of the commonest and most elementary facts of working life. Some of the median scores obtained, on the basis of 100 per cent., are as follows: three second-year high-school classes in the general and classical curricula, 69, 77 and 79 per cent., respectively;

evening school classes of working persons, 76 per cent. In a second-year high-school class, half of the pupils called the tailor a professional worker, and a large number called the plumber, the electrician, the cabinetmaker and the bricklayer professional. Sixteen out of twenty called the electrical engineer a mechanical worker. Eight called the house painter commercial, six the stockraiser, and sixteen the reporter. Evidently high-school pupils have little knowledge of facts we adults take for granted. (The simplicity of the test is shown by the scores of two classes in the Graduate School of Education: medians 95 and 96 per cent.; median deviations only two per cent.). Out of twenty-four common occupations only the gardener was correctly classified as agricultural by all the twenty pupils in this high-school class. In spite of the obviously sensible answer among alternatives, seven pupils endorsed the proposition that farmers organize cooperative associations to prevent government ownership of farms; four that a person should prepare for his life work *before* he chooses a vocation; and eleven that evening school technical studies are especially useful to young children forced to leave school. Three of these high-school children passed over the sheet metal worker and stated that ability to read blueprints is required of the surgeon!

Many boys choose engineering because they wish an outdoor occupation, whereas 90 per cent. of the engineers work indoors. An engineering professor, reporting a recent investigation, states that only 37.5 per cent. of students entering upon engineering courses in American technical colleges and universities are graduated from these courses. He says:

> The decisions to study engineering seem to be based to a very considerable extent upon incomplete or unsubstantial knowledge. . . . Engineering education is consuming a portion of the lives of some 55,000 or 60,000 men per year . . . and it would seem that we should make every effort to have our work done for those who are able to profit by it in reasonable measure.

In 1920 classes in occupations were already well started in a number of American communities, besides which there were many attempts to teach this information through classes in English and citizenship. Some mistakes were made at first. Processes and materials were stressed, oftentimes, instead of callings and workers. Occupational information was usually prepared for counselors, and this information was put before children by teachers who seemed to believe in a theory of educational method in which the child is supposed to absorb information as a sponge absorbs water. Methods have been gradually improved as teachers have seen that the best form of education is self-education. It is now understood that there are three main elements of occupational subject-matter—a study of the characteristics of a number of common occupations, a study of the general problems of the vocational world and a study of education as related to work. Coincident with these improvements which have helped us approach to a worth-while class, the work in the study of occupations has spread to thousands of communities in high schools and junior high schools and has made a beginning in the colleges. Figures indicate that at least a quarter of a million children have studied occupations. The class is usually in the department of social studies and is most frequently found in the ninth grade. It is often advantageously combined with classwork in educational guidance, which comprises such topics as how to study, the purposes of the various subjects, the characteristics of the several curricula, the educational opportunities of the community, and the like.

Much research is needed for the proper solution of the problem of informing children about occupational life. The salient

facts and principles of economics and sociology, as related to vocations, must be sought out, studied, simplified and prepared for juvenile comprehension. It is hard to see how even the ordinary workers of the future can understand their daily environment sufficiently to manage their relationships with each other and with employers in a manner safe for the general welfare, unless they are informed on such matters as the costs of distribution, overhead, wages, unemployment, capital, the business cycle, taxation and the development and present status of the labor movement.

Research is needed, too, on the process of collecting and preparing studies of specific occupations. Mere job analysis may be a prime requisite for vocational education, but it is quite inadequate for vocational guidance.

Again, a study of present vocational decisions would be illuminating. What went on as a substitute for enlightenment in the mind of a person who made a mistaken choice of calling? Was it limited information, propinquity, glamor, mystery, admiration, ambition, conceit, fear, suggestion, laziness, bad advice, victimization, morbid self-analysis, hurry, worry, exaggerated advertisements, inferiority complex or superiority complex? All these lions in the path are seeking whom they may devour, and they mar lives in this unguided world. Scientific forms of guidance must be substituted.

The third stride which vocational guidance has taken since 1920 is the application of tests and other forms of measurement to the work. We have already spoken of a measured appraisal of vocational contacts and of an objective test of knowledge about life. Beginnings have been made in production tests in shopwork, and we are developing in the school print shop and sheet-metal shop, instead of the exhibit of best work, a series of graduated scales representing the different grades of work produced by the individuals composing each of several groups. For example, we shall have a scale for those who have had five weeks of instruction, and another for each of a number of convenient periods—ten weeks, twenty weeks, one year and two years. Trade tests were developed during the war and have been applied, in modified form, to the work of vocational counseling.

Aptitude tests are built on the theory that simple exercises, say of a manual nature, should be possible to a boy or girl who has an aptitude for more difficult tasks of the same general character. Assembling the parts which go to make a lock and selecting from a large number of pictures the tools needed to shoe a horse are samples of this kind of measure. The merit badge tests of the scouting movement have a similar guidance value.

Much has been made in popular literature of the army discovery that there is an intellectual hierarchy among the occupations. The arrangement from high scores to low, however, applies but to the averages, not to all workers. In each occupation itself there is a great range from high to low, and the overlapping among the various occupations is enormous. Nevertheless, it is quite true that if a worker expects to carry on high class intellectual processes in his calling, he should possess a correspondingly high mental equipment. (High is meant here in the academic sense.) Thus it becomes possible to state our guidance in terms of probabilities. If a boy's score is ninety, with one hundred the average score for boys of his age, he had better be warned of the hard problem ahead of him if he persists in his ambition to become an architect, and told that he has a greater chance of success in machine work or drafting. The general intelligence test, so-called, is of course only a composite of specific skills.

If these particular skills are widely selected, and if the result is carefully compared with the other data available, the counselor's advice based on probability of success in a given educational or vocational effort will usually prove useful. Pending further experience, however, tests are best used to increase educational and vocational opportunity, not to limit it.

Turning at this point from these three avenues of progress in vocational guidance, let us note a number of additional gains on the organization side of the movement.

In 1920 the National Vocational Guidance Association was reorganized. In 1921 a statement of principles was formulated by a committee, vigorously debated, amended and adopted by the association. Revised in 1924, this statement gives in condensed form the fundamental principles and policies as agreed upon by representatives of the movement in all parts of the country, and has proved to be one of the most useful documents in the field of education.

In December, 1922, the Bureau of Vocational Guidance was asked and authorized to publish a regular magazine as the organ of the association. *The Vocational Guidance Magazine* is now issued eight times a year and is growing in circulation and usefulness.

Developments in American cities are now on a solid basis. About twenty cities maintain departments of guidance. In hundreds of others organized beginnings have been made and in thousands more selected teachers are doing effective work which will logically lead to organized effort later.

In order that these developments may be safeguarded, many colleges, universities and normal schools have provided classes to prepare teachers for the work. The principles of guidance must be taught, the technique of counseling and the organization and administration. In one state courses in guidance are required in all normal schools. At half a dozen universities curricula of guidance courses are offered during the college year. We listed in 1925 thirty summer sessions which offered work in guidance.

Several research workers in Europe have published studies on vocational guidance, chiefly on human traits and abilities. Great Britain, France, Germany, Czechoslovakia, Switzerland, Spain, Italy, Belgium, Holland and China have shown definite interest in guidance work. The labor office of the League of Nations has published information on the work in various countries.

In the foregoing expansion and evolution the Graduate School of Education has played a helpful part. A combination of instruction, research and publication has prepared many students of guidance, who have gone out to make studies, write, work and conduct courses in this field.

Vocational guidance is a challenging field because of its many unsolved problems, on some of which hang the very peace of the world. It is necessary that pupils before they leave school should think about these problems. A few years ago a young woman who was having her first experience as a teacher said to me one morning, "Oh, I had something terrible happen yesterday in my class in geography; we were talking about the lesson and one boy called another boy a liar, right out in class." I replied, "Thank goodness, you must have been teaching them something interesting and important."

It is natural that students of vocational guidance should differ, if not call one another names. In addition to the problems already suggested, the following moot questions may be cited:

(1) Shall we ever be able definitely to tell a young person what calling he is best fitted for? Professor James once remarked that whatever gains psychology might

make, biographies were not likely to be written in advance. But a few of the present-day psychologists seem to envisage the time when, by compounding the probability coefficients for or against a proposed course of action, we may predict with reasonable certainty. Others maintain that the monitory attitude is the safer one to take and that since the individual must live with and take the consequences of his decision the responsibility for definite prediction is too serious for another person to assume.

(2) Is there any such thing as an aptitude, and if so how may it be discovered? Are there any tests which will enable us to estimate capacity while excluding the effects of experience and training? If not, are we in the way to devise such tests?

(3) What is the best form of vocational guidance for students in vocational courses? We recently collected figures covering 4,375 cases of discharge from industrial establishments. It appears that the chief causes of failure are not lack of skill or lack of technical knowledge: over 62 per cent. of the cases were discharges through failure in human relations and character qualities. What, then, shall be said of a vocational course which confines its work almost wholly to skill and technical knowledge, without teaching or discussing the character requirements, the sociology and the ethics of the occupation? An instance is furnished by an elaborate curriculum to prepare boys for the printer's calling which does not mention the union question.

(4) If qualifications of character are required for each occupation, can these qualifications be developed in situations quite unlike the vocational environment, or must there exist a nexus of common elements of subject-matter, methods or ideals?

(5) How can we fructify the great desert in juvenile life between the ages of fourteen and eighteen, between school leaving and the beginnings of adult employment? Borrowing from the words of Mr. Fisher, former president of the Board of Education in England, "we must come to some system under which learning is not suddenly stopped at fourteen but continued, and woven alike into the empty day of the unemployed and the working day of the employed adolescent. . . . An ever-increasing share of the national attention should be devoted to the development of a system under which the transition from education to industry will not be abrupt as it is now but graduated, so that the idea of continuous self-improvement may be perpetuated through adolescence and that boys and girls may no longer be allowed to waste themselves through lack of a disinterested and guiding hand at a dangerous period of life."

(6) How can the successful vocational career be measured? Just what are the criteria of success and in what manner may these be applied to measure the results of guidance or lack of guidance?

In spite of the complexity and difficulty suggested by the foregoing questions, we are sure of a few principles, some rather obvious, but often neglected. Among them may be noted the following:

(1) Vocational guidance has a social aim even more important than its individual aim. The effort to help John and Mary make a success of their careers is essential, but it is one of the imperatives of good citizenship that we prepare every child to cooperate with his fellows in the solution of those difficult vocational problems which no individual or small group of individuals can solve alone. Nearly one half the space of the last Republican Party platform was given over to these occupational subjects which entwine themselves with civic life—miners, farmers, railway workers, shipping, taxation, unemployment, labor injunctions, and the like. The questions which disturb

the nations—witness Russia, China and the countries involved in war debts—are mightily affected by the vocational life of their peoples. It is well that the researches of the League of Nations are much concerned with problems of labor. In the pursuit of the social aim of vocational guidance its workers can indulge in the advocacy of no doctrinaire solutions; they must stand rather for the proposition that more enlightenment must first be gained and disseminated. If such a task seems too big to make great impression on the present generation of workers, this will confirm us in turning to the schools to accomplish there all we can for the next generation.

(2) Correlative to this social aim is the idealistic nature of the postulates of the movement for guidance. In a democracy the distribution of persons among the nine thousand or more different occupations must be made on the basis of consent. Our faith in life must extend to the assurance that at one and the same time the hopes and needs of the individual will be satisfied as he bends his energies to the task of satisfying the needs of his fellows. Vocational life is incurably cooperative. One's job is his way of seeking his own satisfactions by furnishing goods and services to his fellows.

(3) Vocational guidance has an important and intimate relationship to other forms of guidance, particularly educational guidance. Being a school pupil or a college student is one's vocation for the period of his curriculum. This full-time work of being a student is thereafter succeeded by his life occupation. Furthermore, one's work consumes half of the waking time of an ordinary day, and failure to solve its problems, as Mr. Micawber discovered, seriously interferes with one's home life, citizenship, recreation, culture and well-being, and often also with his morals and religion.

(4) Consequently, this movement is vitally concerned with the unification of the personality and with other principles of mental hygiene. The trouble with the expression liberal *versus* vocational education is with the *versus*. Life has joined together the opportunity for culture and the opportunity for work. Vocational life needs the application of standards of excellence and refinement. Guidance must integrate the various activities and dissolve repressive and divisive dualisms.

(5) Vocational guidance seeks to prolong the vocational infancy of the child. It counsels him to delay final choice of calling, and, after he has chosen, to continue his broad education as long as he can. It maintains, at the same time, that the policy is unwise which would carry the youth upon a high and rarefied academic plateau, only to drop him into vocational life without any discussion of its problems. A prematurity safeguarded both from too early responsibility and from dangerous ignorance must in time be won for all.

(6) Girls have a double vocational responsibility for which they must be prepared: first, the four-out-of-five probability of managing a home, and second, the likelihood, as represented by statistics of vocational life, of employment before if not also during married life.

(7) Guidance must be really guidance, with a maximum of awakening and enlightenment and a minimum of control and prescription. This is an age when the educational world is well stocked with machinery for doing things *to* children; guidance is solicitous to find ways and means to awaken children to do things for themselves. When pupils are all tested, examined, classified, enrolled and graded, when buildings have been provided, teachers engaged, books distributed and courses of study formulated, we have but been *preparing* for our work; the real task of guiding and educating children has yet to be begun.

(8) In a school system vocational guidance is a coordinating agency, which asks information and service from many other agencies both in and outside of the schools. In this it is not like the process of organizing junior high schools, which is an administrative measure; nor like testing and classifying, which can be consummated; nor like vocational education, which can be isolated and housed in one place. Guidance in a school system is a process which is permeative, incorporated, continuous.

(9) The practical nature of guidance makes it necessary that researches in this field be closely related to the service situation. No scholar can go into a laboratory and come out with a formula for vocational guidance. Some of the published researches have proved sterile on account of the neglect of this principle.

In conclusion it may be maintained that vocational guidance has helped and will continue to help all other forms of guidance. Large numbers of its students have cooperated to analyze the various steps in vocational guidance, have formulated subject-matter, counseling procedure and teaching methods, and have begun to measure results. Similar analyses and proposals are urgently needed for the problems of preparing children and youth for home-membership, recreation, use of leisure, care of the person, education, religion and citizenship. The conception of education as guidance is an ennobling one, since it requires its students to try to discover how all forms of knowledge may be used for improving the manifold activities of human life.

But the task of guidance for vocational life alone, while not the greatest among the tasks of education, is nevertheless a large one. Just as St. Francis composed the difference between the *minores* and the *majores* in Assisi, so education for future occupational citizenship must compose differences and dissipate frictions commonly generated in working life. It aims to duplicate in modern life the intelligent harmony between employer and employed pictured in the Book of Ruth: "And . . . Boaz . . . said unto the reapers, The Lord be with you. And they answered him, The Lord bless thee."

John M. Brewer
Harvard University

EDUCATIONAL EVENTS

TOUR OF SOUTH AFRICAN STUDENTS

A party of 150 students of the universities of South Africa, who are about to make a six weeks' tour in Europe, arrived in London recently. They were met at Southampton by Mr. W. J. Langford, president of the National Union of Students; Mr. I. M. Dalrymple, representing Mr. Balinski, president of the International Confederation of Students, and Mr. W. Flowers, honorary secretary for Great Britain. A reception was held at Southampton University College, the principal and students of which gave the visitors a cordial welcome. The party traveled by special train to London, and on arriving at Waterloo proceeded to the headquarters of the National Union of Students, Endsleigh Street, St. Pancras.

According to the London *Times*, the objects of the tour are to enable the students, who come from many parts of the Union of South Africa, to visit universities in England and on the Continent and to get an impression of European life and institutions. The party consists of 90 women and 60 men students, the great majority of whom are making their first visit to England. They are accompanied by Professor Kirby, of Witwatersrand University, and Professor Rindl, of Grey University College, Bloemfontein.

The visitors were received by the high commissioner for South Africa at South Africa House, and there was an official reception at Lancaster House, when Lord Clarendon, undersecretary for Dominion Affairs, and Lady Clarendon acted as host and hostess. The program included visits to Hampton Court, Windsor and Oxford, where the students had luncheon

at New College at the invitation of the warden and the Rhodes trustees. Visits were later made to Bristol, Bath, Wells, Stratford-on-Avon, Birmingham, Liverpool and Manchester, and on January 11 the Continental section of the tour began. This will occupy 18 days, seven of which will be spent in France, four in Belgium and seven in Holland.

On arriving at Harwich on January 29, from the Hook of Holland, the students will proceed by special train to Cambridge and will be entertained by the Cambridge Union Society and the Victoria League. The following fortnight will be spent in England, and on February 12 the party will sail from Southampton for South Africa. On the evening before their departure they will attend a reception which is being organized by the League of Nations Union, at which Lord Cecil is announced to speak.

AN OXFORD STUDENT'S COMMENT ON AMERICAN UNIVERSITY EDUCATION

"THE great word of impression that the English visitor takes away from a study of American universities is 'organization,'" according to Mr. M. C. Hollis, a member of the Oxford Union debating team which traveled last fall throughout the United States. Mr. Hollis's impressions were published in the December 30 issue of *The Outlook*.

Beyond the American's love for organization, Mr. Hollis gives this as the special reason for organization in the universities:

> Here, as in so many other things, America has undertaken a task quite different from any that the world has ever before seen. The European or English university has been able to leave the student much freedom to learn as he chooses simply because it has made no attempt to cater for the student who does not choose to learn at all. The European university has always been an asylum for the oddity with a kink for intellectual interests, a refuge for the minority. America, the first to do so, has tried to give a college education to everybody. The experiment has demanded the price.

Presenting it as "a question that will not down," Mr. Hollis asks:

> Granted that organized athletics, the fraternity system, the amassing of credits, are wise policies with which to meet the problem of the indifferent numbers, are you not sacrificing to them the genuine lover of learning? And is not a system of education which does such a thing a very parody?

Mr. Hollis asks further questions: "Is not the whole philosophy of loyalty to a fraternity a great fraud? . . . How can a man serve three Greek letters? What result does the attempt bring but terrible and crushing sameness, man to man, fraternity to fraternity?"

America, "like a wise shopkeeper, displays its best goods in its windows, on its east and west coasts," declares Mr. Hollis, who found that "the Middle West certainly hates individuality." He concludes:

> A leisurely life is the greatest need of the American university of to-day. By far the greatest vice of American education is that there is much too much of it. No one has ever been educated in a hurry. Long evenings, the Socratic threshing out of subjects until boredom, talk, talk, freedom; all is education, and not text-books and credits. It remains to be seen whether the Eighteenth Amendment has prohibited it.

RESOLUTIONS CONCERNING THE TEACHING OF JOURNALISM

THREE resolutions concerning the teaching of journalism and a report on salaries in newspaper work were among the outstanding features of the recent three-day joint convention in New York of the Association of American Schools and Departments of Journalism and the American Association of Teachers of Journalism.

One resolution declared that the teachers of journalism "regard with satisfaction" the progressive reduction of size of newspaper headlines since the war "and hope for a further reduction until normal typography in accord with the canons of reasonable taste and sound proportion is fully restored."

Another urged more attention to the study of newspapers by those not intending to enter the profession, declaring that the newspaper "is our most significant social phenomenon." A third advised that courses in news writing given in high and secondary schools be not considered journalism training nor as "in any sense preparatory for the profession except in so far as students continue their preparation by a college course of at least four years."

A report on salary conditions in newspaper

work declared that while wages in various parts of the country were extremely hard to classify, nevertheless salaries apparently ranged up to $3,000 a year for reporters and copy-readers of forty-five years of age. The report said in part:

The committee will submit that under present American conditions $3,000 is a now income for an educated professional man between the ages of thirty-five and forty-five, living under city conditions.

The general conclusion is that it is unwise to encourage young men to expect a satisfactory economic return from an aptitude in journalism that is restricted to straight reporting, copy-reading, make-up and the like. The course should be directed toward qualifying the graduate to turn his hand to fairly creditable magazine contributions, to an understanding of contemporary life deep enough to justify him occasionally in venturing upon a journalistic book, or on the other hand should train him in the problem of business management and mechanical production cultivating his independence and any aptitude he may have for financial responsibility.

THE AMERICAN LIBRARY ASSOCIATION

THE following address to the American people has been issued by the American Library Association:

The American Library Association invites the American people to a consideration of the service which libraries are now rendering, and to the possibilities of a much greater service, if larger financial means were available for their work. Through national, state, county, municipal and endowed public libraries, continuous education may be provided for all ages and classes of people at a very small expense as compared with that of their formal education. No less important in the economy of daily life is the recreational service of libraries.

The American Library Association believes and declares that the community served is primarily and directly responsible for the financial support of the library, as it is for the support of its schools. We believe, nevertheless, that through the provision of endowment or trust funds, supplementing those received from taxation, the work of libraries may be greatly extended, enriched and improved. This is especially true of funds devoted to the literature of a particular subject or the work of a particular department of the library.

In many communities the municipal public library has already been the recipient of a considerable number of endowment or trust funds for specific or general purposes. The Boston Public Library, for example, has nearly fifty such funds. In most communities, however, trust funds for libraries are almost unknown. It is this phase of public service that the American Library Association especially recommends to the consideration of persons of means. Funds given for such purposes not only continue indefinitely to provide for the enlargement of the educational opportunities of the people, but they may also serve as a splendid memorial for an individual or group, carrying as they usually do a name identified with a service that continues through the years.

These considerations apply not only to tax-supported libraries, but also to privately-endowed libraries giving a service free to all and to libraries of colleges, universities and other educational institutions.

The American Library Association recommends to library boards or others responsible for the administration of libraries that the possibilities and opportunities of library trust funds be called to the attention of their constituency. It also suggests that library boards see to it that proper legal authority is provided for the handling of such trust funds for the benefit of their particular library, if such authority does not already exist. It may be necessary in some states that legislation be enacted to enable library boards or other municipal authorities to function as trustees for the management of such funds, so as to carry out the terms of a gift or bequest. The development of trust funds presents a vast field for constructive work on the part of library boards. The number, variety and size of trust funds add enormously to the dignity and prestige of an institution, and especially to a tax-supported institution. It is most advisable, however, that gifts and bequests should be so made that changed conditions may be properly met in a legal way without destroying the usefulness and general purpose of the fund.

The American Library Association further recommends to all persons contemplating the establishment of trust funds for library purposes, either by gift or bequest, that before creating such funds, they consult with the librarian, or persons responsible for the administration of the library. The utmost care should be taken to avoid duplication of service, and to make these trust funds of the greatest possible use both for the present and for the future.

The Committee on Library Revenues of the American Library Association recommends that the

council of the association approve the foregoing address to the American people and that the secretary of the association be instructed to give it the widest possible distribution to the people of the United States and Canada.

APPROPRIATIONS FOR THE UNIVERSITY OF MINNESOTA

DESPITE the legislature's special appropriation of $80,000 for a main building at the Grand Rapids Agricultural Station, the percentage of the University of Minnesota's income drawn from the state general fund decreased from 67.2 in 1923–24 to 65.9 in 1924–25, a drop of 1.3 per cent., as shown in the annual report of the comptroller, Albert J. Lobb, covering the fiscal year 1924–25. Since drafting the report Mr. Lobb has been succeeded at the university by W. T. Middlebrook, formerly comptroller at Purdue University, and has become associated with the Mayo Clinic in Rochester.

An increase of more than two per cent. or from 6.5 to 8.7 was recorded in receipts from sales and miscellaneous sources, which rose from $381,179 to $508,131, of which sum $63,686.07 was turned back to the institution as the profit on athletics.

Funds for both years under comparison were voted by the 1923 legislature and the maintenance appropriation for both years was the same, $3,150,000. In the second year of the biennium there was a slight increase in returns from the 23/100 mill tax allowed the university by constitutional provision. They mounted to about $45,000, or from $426,825 to $470,480. There was also an increase of about $35,000 in interest received from university investments, but income derived from the federal government decreased so as to total but 4.2 per cent. of the whole in the year as against 4.6 of all in 1923–24.

The disbursements summary shows that the department of agriculture, costing $1,076,409.24, was the most expensive of the university's branches and required in all 21.5 per cent. of the disbursements in 1924–25. Next most expensive was the arts college, which includes among others all students preparing to enter professional courses. This college cost $659,179, accounting for 13.1 per cent. of the total expenditure. Administration called for but 3.2 per cent. of the institution's total outlay, or in dollars, $161,661.65. Physical plant expenses, which includes all cost of heating, reached $349,652 at the main campus and took up 7.3 per cent. of the expense.

During the year past the University of Minnesota spent $549,147 on permanent improvements and equipment. Only $17,581 was expended during the year in question on the main building at Grand Rapids for which the legislature had voted $80,000.

The report shows that gifts from William Henry Eustis already turned over to the university are valued at $1,060,224, and that the W. J. Murphy endowment is made up of bonds worth at par $354,000. During the year income on the latter fund was $17,550, of which $17,218 was used in buying additional bonds with a par value of $16,000.

RESEARCH IN THE SOCIAL SCIENCES AT COLUMBIA UNIVERSITY

A COUNCIL for Research in the Social Sciences, whose field is "the bases and mechanisms of human living," has been formed at Columbia University. Five research projects, it is announced, are under way with the aid of the Laura Spelman Rockefeller Memorial, and more are planned.

The council, it was stated, brings under a single direction scattered group and individual effort, scholarship again deserting isolation to seek support in organized action. Its formation, it was said, supplies fresh evidence that "the closet philosopher" is passing from the social sciences just as "the garret genius" has passed from the physical sciences.

Dr. Frederick J. E. Woodbridge, dean of the Graduate Faculties, has been elected chairman of the council, made up of representatives of various schools of the university.

Among the research projects already started is one inquiring into "Illiteracy in the United States," under the direction of Professor Frank A. Ross, of the department of sociology. Professor James C. Bonbright, of the School of Business, is making "An Economic Study of the Laws of Business Corporations and Public Utilities."

"A Study of Source Material for a History of New York" is in charge of Professor Evarts

B. Greene, of the department of history. To Professor Franz Boas, of the department of anthropology, has been assigned the task of conducting research among the Navajo Indians. Professor Carlton J. H. Hayes, of the department of history, is directing a study of "Economic Internationalism in the Caribbean Region."

In explanation of the aims of the council, Dean Woodbridge said:

By action of the University Council there has been instituted a Council for Research in the Social Sciences which brings together for cooperation and mutual inquiry the several departments and agencies in the university which are interested in the bases and mechanisms of human living.

The new organization should be an effective supplement to the researches normally undertaken by individuals, departments and faculties. It should also serve to bring greater unity and cooperation into an enterprise which is apt to suffer unnecessary dispersion in consequence of our departmental and faculty divisions.

It is the outcome of a conference on the social sciences at the president's house two years ago and of subsequent meetings of interested individuals. Already several researches have been approved and work upon them begun.

These are supported in part out of the special research fund of the university and in part by a generous subsidy from the Laura Spelman Rockefeller Memorial.

The gift of the memorial has made it possible to plan at once for important inquiries which will extend over a period of years. The council is, however, in need of increased funds for the work it has planned.

The laboratory of the social sciences is not something which can be housed in a university building. It is society itself. Studies must be made in the field, either directly or by the assembling of materials already available in consequence of direct study.

There is need of much new and renewed exploration. All this involves an expenditure of money much in excess of what the university has normally at its command for the maintenance of its established departments in the social sciences.

The new enterprise it has undertaken should command itself heartily to those who are alive to the present importance of disinterested and scientific inquiry into the factors which determine the character of our civilization.

Professor Roswell C. McCrea, who occupies the Hepburn chair of economics in the School of Business, characterized the council as "a new departure at Columbia whose significance lies in facts not in fads and fancies." He continues:

Organized social research has grown apace in recent years. Under governmental auspices as well as under private foundations research projects are being fostered much as has been done in the physical sciences.

Universities, for the most part, have left research in the social sciences—economics, sociology, anthropology, political science, business and kindred fields—to the initiative of individual faculty members. This has limited the scope of research projects and has restricted the activities of social thinkers in a measure to speculative rather than to strictly scientific work.

Columbia University has recognized the need for organized, cooperative action in this field by establishing a Council for Research in the social sciences, made up of a group of representative faculty members, under whose general oversight sums in excess of $50,000 per annum will be spent for a number of years to come in support of a series of organized research projects.

It is expected that the results of investigations undertaken with adequate staff, adequate financial support and adequate statistical tools, will gradually lay foundations for scientific generalization in economics, politics and the other social disciplines which will gradually lift their status above the level of the closet philosophizing of the past.

THE ANNUAL CONFERENCE OF THE NATIONAL VOCATIONAL GUIDANCE ASSOCIATION

THE National Vocational Guidance Association is a nation-wide federation of people interested in promoting vocational and educational guidance of the nation's boys and girls. So great is the interest in this subject that membership in the association has passed the twelve hundred mark, and is steadily climbing. Branch organizations have been formed to the number of eighteen, as follows: New York City, Columbia University and Rochester, N. Y.; Philadelphia and vicinity, and western Pennsylvania; Cincinnati and northeastern Ohio; California and southern California; New England; Kansas City, Kan.; Washington, D. C.; Missouri and St. Louis, Mo.; Colorado; Minneapolis, Minn.; New Orleans, La., and Wisconsin. The Colorado Vocational Guidance Association and the

Wisconsin Vocational Guidance Association are the newest members, having been chartered since the last conference in February, 1925.

Officers for the present year are:

President, Dorothea de Schweinitz, University of Chicago.

First Vice-president, A. H. Edgerton, University of Wisconsin.

Second Vice-president, Max Meyer, University of Missouri.

Treasurer, Harold H. Bixler, Atlanta, Ga.

Secretary, Anne S. Davis, Chicago, Ill.

Trustees, Edward Rynearson, Pittsburgh, Pa.; Harry D. Kitson, Columbia University, N. Y.; Mary H. S. Hayes, N. Y. City; John M. Brewer, Cambridge, Mass.; Mary Stewart, Washington, D. C.

This year's conference of the National Vocational Guidance Association will be held in Washington, D. C., February 18, 19 and 20. Headquarters are at the Hotel Washington.

Following is a résumé of the program:

General Meetings:

The Year Book—Counselling.
Placement.
Personnel Service in Public Schools.

Section Meetings:

Mental Measurements.
Scholarships.
Occupational Information.

Joint Sessions:

National Committees of Bureaus of Occupation.
National Association of Secondary School Principals.

Banquet:

Speakers of national reputation in education and personnel work.

The *Year Book*, to be discussed at the general meetings, is to be the first of a series in which it is intended to embody the fruit of the experience of active workers in the field of vocational guidance all over the country. The need for such a compilation has long been felt, but it is only now that methods and functions of counsellors have become sufficiently formulated to raise as standards for newly-organized guidance groups to follow.

ANNE S. DAVIS,
Secretary

THE SUMMER QUARTER OF STANFORD UNIVERSITY

AMONG the visiting faculty for the coming summer at Stanford University will be Dr. Alfred Francis Pribram, who will come from the University of Vienna to be acting professor of history. He is a recognized authority on the period of European history preceding the World War, and is the author of many historical studies in addition to his work on "The Secret Treaties of Austria-Hungary," written in English and published in 1920. Professor Moritz Geiger, who for the last three years has been professor of philosophy at the University of Göttingen, will serve as acting professor of philosophy.

Dr. Charles Jesse Bullock, appointed as acting professor of economics, is chairman of the committee on economic research at Harvard University and director of its operations.

In geology, while emphasis will be placed on geologic studies in the field, the usual courses will be given on the campus. The visiting professor will be Dr. Warren D. Smith, head of the department of geology at the University of Oregon. Dr. Smith is particularly well informed on the geology of the Pacific region.

The chair of political science will be held for the summer by Dr. Samuel Corwin, who is the McCormick professor of jurisprudence at Princeton University.

The visiting professor in physiology will be Dr. R. A. Moore, of Rutgers College, one of the younger men who has already distinguished himself in his work. His course will be given at Hopkins Marine Station, Pacific Grove, where the work in zoology, biology and botany is carried on through the summer quarter.

The Law School will have as visiting professors Ralph W. Aigler, professor of law at the University of Michigan; William Green Hale, dean of the University of Oregon Law School; R. Justin Miller, professor of law at the University of Minnesota, and James Wiggins Simonton, professor of law at the University of Missouri.

As usual, the School of Education will provide courses covering the state requirements for certification of teachers and school executives, as well as the advanced work for those seeking degrees, of whom there are always a large num-

ber. Of the 335 students registered in education last summer, 215 held the A.B. degree and 46 the degree of A.M.

Dr. John A. Sellards will continue his administrative work as director of the summer quarter.

EDUCATIONAL NOTES AND NEWS

DR. W. T. SEMPLE, professor of Latin in the University of Cincinnati, was elected president of the American Association of University Professors at the recent Chicago meeting. Dr. William B. Munro, professor of municipal government at Harvard University, was elected a vice-president, and Dr. H. W. Tyler, professor of mathematics at the Massachusetts Institute of Technology, was reelected secretary.

DR. PAUL H. HANUS, professor emeritus of the history and art of teaching at Harvard University, has been appointed Inglis lecturer for 1926. The title of his address is "Opportunity and Accomplishments in Secondary Education." The Inglis lectureship in secondary education was established by the graduate school of education to honor the name of the late Professor Alexander Inglis, who at the time of his death in 1924 was an outstanding leader in the field of secondary education.

PRESIDENT-ELECT DANIEL L. MARSH, of Boston University, will meet the "official family" of the university for the first time at a banquet on January 19, at which the guests will include Governor Alvan T. Fuller, recently elected trustee of the university, Mayor Malcolm E. Nichols, of Boston, and Bishop William F. Anderson, since January 1, 1925, acting president of the university.

THE list of those receiving the decoration of the crown of Belgium for assistance in collecting a fund for the restoration of the library of Louvain University, in addition to Dr. Graves and Dr. O'Shea, recently reported, includes George G. Ryan, president of the New York Board of Education; Dr. Vernon Kellogg, secretary of the National Research Council; Perrin C. Galpin, of the Belgian Relief Committee Educational Foundation; Henry S. Haskell, of the Carnegie Endowment for International Peace, and the Right Reverend Joseph M. Francis, Bishop of Indiana.

THE annual $1,000 prize of the American Association for the Advancement of Science to the author of a notable contribution to science presented at the meeting was awarded to Dr. Dayton C. Miller, professor of physics at the Case School of Applied Science, Cleveland, Ohio. The award was based on Dr. Miller's address on "The Michelson-Morley Ether-Drift Experiment."

DEAN ROSCOE POUND, of the Harvard Law School, who has been engaged at Washington since October 26 in the peaceful settlement of international disputes, has returned to his post in Cambridge. In October, Dean Pound was appointed by President Coolidge to sit on the Board of Arbitration on British-American affairs. The other members of the tribunal are Senator Albert Nerinx, professor of public law at Louvain and senator of the kingdom of Belgium, president of the board, and the Right Honorable Sir Charles Fitzpatrick, G.C.M.G., the English representative.

DR. ALBERT MANSBRIDGE, of London, founder of the Workers Educational Association and chairman of the World Association for Adult Education, is *en route* to the University of California to deliver the Errol lectures. He will later visit Canada.

SENATOR ANDRÉ HONNORAT, former Minister of Public Instruction and Fine Arts of France, as special delegate of France, conveyed the greetings of Ambassador Daeschner at the dedication in New York last week of the French Institute Building, 20 East Sixtieth Street, which is provided as a home for the Museum of French Art.

JOHN BURNET, professor of Greek at the University of St. Andrew, Scotland, arrived in the United States on December 30. He is lecturing at the University of California.

DR. LOUIS I. HARRIS, a member of the staff of the New York City Department of Health for the past eighteen years, has been appointed commissioner of health of that department by Mayor Walker. Since his original appointment in 1907 in the diagnostic division, Dr. Harris has served successively as medical inspector of the child hygiene division, assistant to the chief of the division of preventable diseases, chief of

the bureau of industrial hygiene and, since 1917, as director of the division of preventable diseases.

ALBERT S. RAUBENHEIMER has been promoted to be associate professor of education at the University of Southern California.

THE REVEREND DR. PETER AINSLIE, pastor of the Christian Temple, has accepted a resident lectureship in the department of Biblical literature at Goucher College.

WALTER T. ELDER, who has been connected with the Pennsylvania State College since 1919, has been appointed associate professor of industrial education at Rutgers University.

DR. ALBERT O. HAYES, of Ottawa, Canada, has been appointed visiting professor at Lafayette College to fill the vacancy in the geology department caused by the death of Dr. Frederick B. Peck.

FRANKLIN E. PARKER, JR., a lawyer of New York City, has been appointed to the library staff of Harvard University, as honorary curator of English literature in the eighteenth century.

DR. JOHN O. EVJEN, who was president, for some time, of the Mayville, Ky., State Normal School, has become a professor in the Hamma Divinity School, in Springfield, Ohio.

A NEW school building in Plainfield, N. J., has been named for the superintendent of schools, Dr. Henry M. Maxson.

GEORGE H. COVEY, of Katonah, superintendent of schools of the third supervisory district of Westchester county, was elected president of the New York State Teachers Association at a recent meeting of the house of delegates.

A. J. BURTON, principal of the East high school of Des Moines, is the new president of the Iowa State Teachers' Association. Allen R. Nieman has been elected president of the consolidated school section.

MISS MAMIE B. LANG, who served as superintendent of Tehama County, Calif., has resigned to accept the position of state commissioner of elementary schools. Paul D. Henderson, of Molinos, succeeds Miss Lang as county superintendent.

W. W. ANKENBRAND, of Pleasantville, Ohio, has accepted a position on the faculty of the Eastern Illinois Teachers' College, and has been succeeded by Mr. R. M. Eyman, for three years principal of the Pleasantville high school.

JOHN W. DODD has been named superintendent of schools at Freeport, N. Y., to succeed George F. DuBois. Mr. Dodd was formerly principal of the high school, and had been acting superintendent since the opening of the school year.

M. J. KENDALL, principal of the Priest School, Manchester, Mass., has resigned to become district superintendent of schools at Norwich, Vermont.

JOHN A. SEXSON, superintendent of schools at Bisbee, Arizona, has been appointed by Governor Haub a member of the State Board of Education.

MARCUS AARON has been reelected president of the board of education at Pittsburgh, Pa. Mr. N. R. Criss has been elected vice-president and Mr. George W. Gerwig secretary.

THE Cincinnati board of education has elected William J. Shroder, president; Dr. F. B. Dyer, vice-president, and Robert Shafer, secretary.

AFTER serving Harvard University for five years as controller, Frederick S. Mead, '87, of Brookline, has resigned. Arthur L. Endicott, '94, bursar, has been named acting controller.

THE daily press reports that Jean Painlevé, son of the eminent mathematician, recently premier of France and now Minister of War, plans to make money to increase the facilities of the Sorbonne laboratory in which he is working by becoming temporarily a motion picture actor.

DR. JAL DASTUR C. PAVRY, who recently received a Ph.D. degree at Columbia University after four years of study there, sailed last week for Bombay. According to the New York *Sun*, Dr. Pavry will soon become high priest of the Parsees, a religious body in India numbering more than a million persons, succeeding his father, who is reported to be dying.

DR. CHARLES A. PROSSER, director of the Dunwoody Industrial Institute at Minneapolis, is giving a series of lectures in Boston under the

auspices of the educational committee of the Twentieth Century Club.

PROFESSOR W. W. CHARTERS, of the school of education of the University of Chicago, gave an address on "Problems in Curriculum Construction" before the national council meeting of Phi Delta Kappa in Chicago on December 30. Other speakers on the professional program were: Wesley L. Brown, research director, New Trier Township High School, Kenilworth, Ill., on "Personnel Work in Education," and Logan M. Anderson, associate supervisor of training, R. R. Donnelly Company, The Lakeside Press, Chicago, on "The School Master in Industry."

ALBERT S. COOK, state superintendent of education; Miss I. Jewell Simpson, assistant state superintendent, and Miss Teresa Wiedefeld, assistant supervisor of elementary schools, were among the principal speakers at a two-day conference of school superintendents and supervisors held in Easton, Md., beginning on January 15.

DR. LUIS MIRÓ QUESADA, professor of the philosophy of education in the University of San Marcos, Peru, has established a seminar for "investigating the psychological and educational value of mental tests and the conditions under which they may be introduced into the schools for the purpose of determining differences in mental ability among the students."

DR. JOHN ROBERT SIM, professor emeritus of mathematics in the College of the City of New York, died on December 22, aged seventy-six years.

THE formal dedication of the $500,000 high school in Dunkirk, N. Y., took place on November 30, with addresses by Dr. Thomas E. Finegan, formerly deputy commissioner of education in this state, and by Frederick R. Darling, superintendent of schools at Dunkirk.

THE President's Committee on Outdoor Recreation has extended an invitation to the National Conference on Outdoor Recreation and to the members of the General Council to meet in Washington, D. C., January 20 and 21. The sessions of the conference are public and will be held in the Assembly Rooms of the United States Chamber of Commerce beginning at 10:00 A. M., on Wednesday, January 20. There will be an afternoon session at the chamber and an evening smoker session at a place to be announced later. Sessions will continue throughout Thursday concluding with a meeting of the general council for the election of officers for the new year. The conference will be devoted to the consideration of federal and state responsibilities in the outdoor field and the determination of a program for the consideration of the President's Committee. On Thursday evening at half past seven at the Mayflower Hotel a formal dinner will be given by the Conference in compliment to the President's Committee. Honorable John Barton Payne will preside and Honorable Herbert Hoover, Secretary of Commerce, will speak.

THE Textile Section of the American Home Economics Association, through its committee on research and standardization, offers a fellowship of $300 to be used during the school year 1926–1927 at a college or university of recognized standing. The research involved is to be done under the direction of a member of the staff who has made contributions in the field of textile research either personally or through the work of students. Receipt of applications will close March 1, 1926. Requests for application blanks should be sent to Miss Ruth O'Brien, Bureau of Home Economics, Department of Agriculture, Washington, D. C.

THE Society for Ethical Culture of New York City will receive more than $1,700,000 under the will of Robert B. Hirsh, in addition to the following smaller bequests: Hudson Guild, $25,000; Cooper Union, $20,000; Educational Alliance, $10,000, and the Hebrew Technical Institute for Boys and the Hebrew Technical Institute for Girls, $10,000 each. In leaving the residuary estate to the Society for Ethical Culture, he requested that the income be used for the education of deserving boys and girls and for men and women studying to become teachers.

AN appropriation of 160,000 yen for the encouragement of physical training is to be included in the next year's budget as a result of the success of Physical Training Day in Japan on November 3.

ACCORDING to newspaper reports, Yale University will receive $600,000 and the Sheffield

Scientific School $300,000, under the will of George St. John Sheffield, '63, of Providence, recently filed in New York.

BY the will of Edward F. Reilly, formerly a Democratic politician, the sum of $90,000 is bequeathed to establish scholarships in the University of Detroit and in the University High School.

A PHYSICO-CHEMICAL institute, to serve as a center for Spanish scientific men, is assured by a gift of $200,000 from the Rockefeller Foundation. The site of the building will be provided by the Spanish Government. It probably will be near the Museum of Natural Sciences in this city.

THE board of education of Albany, N. Y., has raised its salary schedule so that now the maximum for teachers of kindergarten through the sixth grade is $1,900, seventh grade $1,975, and eighth grade $2,050. Any teacher in this group who obtains a bachelor's degree in college receives one additional increment of $100. The maximum for high-school teachers is $2,300 and any teacher in this group receiving a master's degree receives an additional increment of $100.

UNDER the auspices of the New England Association of Chemistry Teachers, a course of illustrated lectures for teachers is being given by the professors of the Massachusetts Institute of Technology at the institute on the afternoons of January 6 and 20, February 3 and 17, March 3 and 31 and April 14.

SPECIAL CORRESPONDENCE

THE CONNECTICUT COLLEGE COURSE IN "THE ART OF LIVING"

CONNECTICUT COLLEGE is giving this year a course called "The Art of Living." Aware of the gulf that usually exists in the mind of the student between her "practical life" and her "book knowledge," aware also of the unrelated character of the student's bits of information as these are acquired from a study of specialized fields, we have thought to institute a course which should have as its primary aim, correlation: (1) of the various fields of knowledge and of skill entered by the student during her college career; and (2) between the knowledge and skill that is acquired in the class room, the laboratory, etc., and practical life in "the world of affairs" into which the student is to go after graduation.

There is represented in these two kinds of correlation the theoretical and the practical impulse towards unity. In the first case, we are trying to help the student to some appreciation of the organic character of knowledge, of the relationship that therefore exists, *e.g.*, between the various sciences or between the implicit, "intuitive" knowledge of the poet and the explicit, consciously-grounded knowledge of the scientist, etc. In the second case, we wish to help the student to visualize something of the main outlines and interests of her future life in the "actual" world, to bring to bear on that visualized life and its problems and plans the insight and the training she is developing in college.

Twelve instructors, representing the major departments in the college curriculum, are cooperating in the course. Lectures are given, also, at appropriate places by the president of the college, by a physician, and by a lawyer of New London. Review and quiz hours are scattered throughout the year. A considerable amount of reading is required with critical reports thereon. In general each instructor requires from the student an essay on some topic in the field under study at the time. This essay is based on material obtained from reading and from class lecture notes.

The course is listed under the department of home economics. Where in the work emphasis is laid on the practical aspect of knowledge and skill, it is done so far as possible from the point of view of the efficient, cultured woman in the home.

The instructors are aware of the difficulties inherent in an attempt to give successfully a course of this kind, in one sense even more ambitious than the popular orientation courses of the day; but they are also aware that the need for this kind of course is directly proportional to its difficulty. Higher education, or any education, that does not "take," that does not do something to the student's self and to

her point of view, is not education. If this course helps ever so little in making knowledge really vital and thought really purposive, it will be in our judgment successful.

We have at the present time just completed three months of our course. The students enrolled, who have cooperated well with the instructors from the first, are finding their work interesting and profitable, judging from their spontaneous, unsolicited reactions.

FRANK E. MORRIS

CONNECTICUT COLLEGE,
NEW LONDON

DISCUSSION

SCIENCE TEACHING IN THE SECONDARY SCHOOLS

IN the issue of SCHOOL AND SOCIETY dated November 21, 1925 (Vol. 22, No. 569, pp. 633–639), there is an article by R. A. Millikan which demands comment. With some of Mr. Millikan's major theses I am in hearty agreement, namely that we have scarcely begun to touch the possibilities in science instruction in secondary schools, that among the important things to be considered are the formulation of the courses of study, the determination of methods and the preparation of teachers. I should also concur with him in the desirability of three years of sequential science in high schools.

But that the elements in the problem of secondary-school science "are simple and definite and that the mere statement of these elements at once points the way at least to the next steps in their solution" seems to me an optimism born of ignorance. His statement that the successful technique of teaching high-school physics and also other high-school sciences is now pretty well known, a technique which he claims has been worked out by trial and error, is far from the truth. If one had made fifty years ago a similar statement in regard to medicine, namely, that the technique of treating diseases had been thoroughly determined by the preceding centuries of the trial and error method, he certainly, in the light of the advances made in the last fifty years by the scientific method, could justly have been accused of rashness. The scientific study of the efficiency of the various types of procedure in the teaching of physics and other sciences has only just begun. The curious thing is that men who are supposed to be saturated with the scientific attitude of mind fail to see that the problems of teaching must be attacked in the same scientific way as the problems of the physical and biological sciences. Surely the trial and error method would not go far in settling the problems on which the present day physicist is at work. Nor can we expect them to be more successful in settling the problems of teaching.

It seems to me that the article in question commits a second breach in the fundamental principles of scientific thinking. It concludes that because contemporaneously there is a decline in the percentage enrollment in the old-line sciences in Minnesota and a gain in general science that the latter is the cause of the former. And yet to conclude that two sets of phenomena which are occurring simultaneously must be related as cause and effect is a characteristic fault of immature thinking. The statistics from Minnesota show similarly that during this period there has been a marked increase in the enrollment in agriculture and domestic science. Would it not be just as reasonable to conclude that these were the offenders against the old-line sciences rather than general science? The last figures of the United States Commissioner of Education show that the increase in the percentage enrollment, country over, in general science from 1910 to 1922 is even greater than that quoted for Minnesota. During this same period there has been a marked decline in the enrollment in Latin, English and mathematics. Yet it is hardly possible that the increase in the enrollment in general science is responsible for the decline in these other subjects. Furthermore the decline in the percentage enrollment of the old-line sciences began and continued for several years before general science was commonly introduced into the high-school curriculum. Such declines not only in the old-line sciences, but in such subjects as English, Latin and mathematics, are apparently more logically explained by the fact that the number of subjects offered in the high-school curriculum has been constantly increasing for a generation, and if a given body of students is subdivided into a continually increasing number of groups the percentage in each is evidently bound to decline.

I am very glad to know that the institution of which Mr. Millikan is head is putting in such a comprehensive program for the training of the teachers of science. I wish all universities might profit by the example. But that the best place to get a teacher of science for secondary schools is "in the great centers of scientific activity in the country; in the graduate schools of science" is not axiomatic. These graduate schools are not as a rule interested in giving their students a broad foundation in science courses in botany, zoology, chemistry, physics, geology, astronomy, etc., with a view to preparing the student for teaching, but they encourage him to specialize in a single line or in closely related lines with a view to his development as a potential research worker. More than that such institutions rarely encourage the student to select courses that will acquaint him with the problems of the teaching of science, taking it for granted apparently that all one needs to learn to become a successful teacher is the subject matter that he is going to teach. When one realizes that in such typical states as Indiana, Michigan, Illinois and Wisconsin, eighty-five per cent. of the high schools are four-teacher schools, it is evident that the science teacher must handle all the science that is taught and probably some other subjects as well. The breadth of preparation required for such training is rarely achieved in the great universities. Moreover the high-school teacher selected from the graduate schools of science goes out with no appreciation of the objectives of secondary-school education, or of the principles of selection of the subject matter, or its organization. He does not realize that he is dealing with a group of pupils that have a psychology peculiarly their own. He teaches as he has been taught at the graduate level. He probably uses a text-book, an abridgement of a college text, written by a university professor whose organization of material and presentation is that of the mature scientist and not that of the adolescent pupil. He needs training in the science and art of pedagogy, quite as much as in the sciences he is to teach. Modern pedagogy can help him because it solves his teaching problems on a basis of scientific fact.

ELLIOT R. DOWNING
THE UNIVERSITY OF CHICAGO,
THE SCHOOL OF EDUCATION

QUOTATIONS

THE USES OF PSYCHOLOGY

DR. J. MCKEEN CATTELL, in his presidential address before the American Association for the Advancement of Science, at the opening session in Kansas City, gave numerous illustrations of the psychology which is concerned not with introspection but with quantitative measurements and objective results and with conduct as well as consciousness. The literary diversions of those who like to narrate what they think they think, or feel they feel, or imagine they imagine, are characterized by him as contributing about as much to a science of psychology as similar stories about rheumatism and other human ills would contribute to the science of pathology. The psychology which his school of scientists professes and practices goes into the street and the office and the shop to make its observations and to give its advice. It discerns differences due to native endowment or merely to experience. It measures the interval between a sound and the sequent lifting of a hand, and computing the consciousness involved in the physiological processes, gives advice concerning a matter as practical as the selection of taxi drivers. It watches the movements, physical and mental, of the men with the pick and shovel, the typewriter and the ledger and of every type of activity through to the organization of the work of the executive or congress of a nation in order to tell how productivity may be increased and effort and fatigue lessened. It observes the reactions which are made to what is brought to the mind by the eye or ear in books and newspapers and suggests methods of learning to read most rapidly and selects the most legible page. By the use of its tests, which research will perfect, it could perhaps effect a direct saving to transportation corporations alone of tens of millions of dollars.

The human psycho-physical organism has had to make its adjustments to a constantly changing world. "It was not adapted to the innumerable new demands of modern civilization." It is the business of psychology to help this plastic creature to adapt itself. Scientific research and the application of science in the course of 150 years has helped man to increase fourfold the productivity of his labor and at the same time doubled the length of his life.

It has, moreover, shortened the hours of routine tasks, while it has doubled consumption. And it is now stated that if the resources provided by science were only "properly distributed," there is sufficient wealth to enable all to share in the "desirable luxuries" which science has created and to enjoy in full measure the "most nearly ultimate goods of life." Such a distribution will be possible, it is further contended, when we have an applied science of psychology universally applied.

No better brief summary can be written of science's achievements than that with which Dr. Cattell closes his presidential address:

> The applications of science have abolished slavery and serfdom, the need of child labor, the subjection of women; they have made possible universal education, democracy and equality of opportunity, and have given us so much of these as we have. Science has not only created our civilization; it has given to it the finest art and the truest faith. The advancement of science should be the chief concern of a nation that would conserve and increase the welfare of its people.

After this, one is ready to agree that for an optimist the greatest misfortune is to have been born long ago, and to add that the greatest fortune is to be leading on the forces of science in the advance upon the unknown, as the thousands now gathered at Kansas City are unitedly attempting—astronomers, geographers, chemists, physicists, biologists, economists, sociologists, doctors, scientists in every field of human knowledge, under the guidance of a scientific psychology of human welfare.—*The New York Times.*

BOOKS AND LITERATURE

Medieval and Late Latin Selections; for the use of college students. By CHARLES UPSON CLARK and JOSIAH BETHEA GAME. Chicago: Mentzer, Bush and Company. 1925.

THE first thing the reader will feel like saying about this book is that it is entertaining in every page and line of the text, and that the sensible and simple introductions and notes do not obscure its purpose by length and learning. His next thought will probably be that the book will admirably satisfy the desire common among teachers of Latin for something in their tongue corresponding to the "easy reading" so effectively used by the the modern language teacher. In *Medieval and Late Latin Selections* we have something really easy and really Latin and really interesting and of real value. The thirty pages and twenty-seven selections of Part I range in time from Gregory of Tours to Erasmus of Rotterdam, and illustrate Bede, Geoffrey of Monmouth, the Irish Tnugdal, Prester John, the *Mirabilia Romae*, Gervase of Tilbury, and others. Part II, with three times as much material, presents twelve authors. Here we begin with the fascinating Jerome, and are introduced to Gregory the Great, Columbanus, Bonaventura, Peter Martyr of Anghiera in his narratives of Columbus and the early discoverers, and the always interesting Erasmus Story-telling prevails, and marvels abound, yet without preventing the content from being rich in details of fact and serving in a sort as a mirror of medieval life. The book is delightful above all for human interest. It should be kept at hand by the teacher of Latin not only in college but in the high school, for use as supplementary class exercise, or as outside reading, or as reading in regular course, and it will be found exceedingly pleasant also by the general reader out of college who wishes to keep alive the illusion that he learned to read Latin in his classical courses.

GRANT SHOWERMAN

EDUCATIONAL RESEARCH AND STATISTICS

PREDICTING SUCCESS IN COLLEGE AT THE TIME OF ENTRANCE

THE principle of basing judgment regarding probable success in college upon the combination of several kinds of information about the student was proposed by the writer in two studies[1] reported in this journal. In the second study dealing with a group of students who entered this college in 1917, use was made of high school scholarship, psychological tests, the proportion of advanced studies elected in the high school and the first three themes written in freshman English. It was clearly shown that the combination of several measures gave more reliable prediction than the use of any one of those measures alone.

[1] SCHOOL AND SOCIETY, November 20, 1920, and April 1, 1922.

In a third study begun in 1921 more complete and accurate data from the high schools and very greatly improved psychological tests were available. A combined rating scale based on high-school records and tests given freshmen at entrance was applied to the groups of students entering the college each year from the high schools of Minneapolis and St. Paul. The prediction that those who fell below a certain level in the ratings would be unsuccessful in college work proved true within a very small error.[2]

The following year Leland Stanford University undertook a similar study, combining the Thorndike intelligence tests and the high-school records.[3] Although the correlations obtained between the combined ratings and the first two quarters of freshman work are not as high as those reported from our study at Minnesota, the Stanford experiment confirms our findings that the combination of the two measures gives much more satisfactory results than either alone.

Previous reports of this method have dealt chiefly with freshman scholarship. It is not safe to assume, however, that measures which have a high correlation with freshman scholarship are therefore fully satisfactory for predicting final success or failure in college work. The question arises, how far are freshman marks a measure of a student's ability? Also, how many students do poorly in the freshman year but later retrieve themselves and go on to graduation? It is important to report the performance of the groups studied over longer periods.

The groups studied each year consisted of the native-born white pupils who graduated from the high schools of Minneapolis and St. Paul in June and entered the college in September of the same year.

I. *The 1921 Group:* This was the first group on which the present method of prediction was worked out. As the same method is being applied to each successive class it is highly instructive to examine the results in comparison with the college work of this group during four years.

The group consisted of 226 men and 206 women. The threshold of college ability was located between the percentile ratings 35 and 36 for men and between ratings 30 and 31 for women. As the threshold was drawn there were placed below it eighty-seven men and twenty-eight women, including two men and two women who had satisfactory marks in their freshman work, the records of which were already in hand. The two men have remained in the university and entered the law school. One has conditions in one third and the other in one fourth of his work in law in 1924–25. Of the women one transferred to the College of Education and has a standing slightly below satisfactory, the other remained in liberal arts and has satisfactory marks but has not completed in four years the credits required for graduation.

Among those whose ratings fell below the threshold and whose freshman work was unsatisfactory, the following should be mentioned. Two men, although retarded in progress by one year, have now satisfactory marks in law and dentistry, respectively. One man after repeating the freshman year at another university has satisfactorily completed his junior year in liberal arts. One woman in this college and two who have transferred to the College of Education have attained C standing but have not completed the normal number of credits.

From these statements it appears that no student whose ratings fell below the threshold can be regarded as a wholly satisfactory college student; that the records of a few stand as a credit to the college for helping them to find themselves after a poor start and that some of these will eventually graduate. None of these students has attained an average standing above C. The number placed below the threshold in this study was 26.6 per cent. of the group.

There is a noticeable correlation between the combined ratings and the length of stay in the university. The following facts regarding voluntary cancellations and withdrawals will illustrate this. There have been 187 voluntary withdrawals, only five of which occurred during the fourth year of residence. Not one of the thirteen students whose combined ratings were above 90 percentile has left the university. Of the 74 students who did not return after three quarters or who cancelled earlier, only five had

[2] SCHOOL AND SOCIETY, June 28 and July 5, 1924.

[3] Proctor in SCHOOL AND SOCIETY, October 10, 1925.

ratings above 75, only 16 had ratings above 60 and only 27 had ratings above 50. Of the total 187 withdrawals, 13 had ratings above 75 percentile, 48 had ratings above 60 and 72 had ratings above 50. More than 60 per cent. of the voluntary withdrawals occurred among those whose ratings were below the average and 93 per cent. occurred among those having ratings below 75 percentile. The proportions of withdrawals is greater among those with lower ratings. Of the 27 who withdrew the first quarter only one had a rating above 75, two above 60 and six above 50 percentile. As would be expected there is a higher correlation between marks and voluntary withdrawals. Of the 187 withdrawals only 35 had an average standing of C or higher. This is 18.7 per cent. Of the 218 who stayed in the university twelve quarters 139, or 60 per cent., had average marks of C or higher. This included all those whose residence has been interrupted, four of whom had once been dropped for low scholarship.

Since the 1922 group was also used in the development of the method with the aid of the freshman scholarship records, we shall pass to the report on the later groups, in the case of which actual prediction was undertaken.

II. *The 1923 Group:* This group included 148 men and 154 women, total 302. The number was smaller than that in 1921 because some of the small high schools were omitted from the study. The prediction of success or failure was made at the opening of the freshman year and purposely was made in such a way as to give a severe test of the technique thus far developed. The threshold of college ability proved to be correctly drawn for women between percentile ratings 30 and 31. For men it was drawn between ratings 45 and 46, which proved to be too high. If the threshold for men had been drawn between ratings 41 and 42, two men with ratings 42 and 44.5, respectively, who did satisfactory college work would have been placed above the line. Later experience has shown that it is unsafe to place the threshold even as high as rating 40.

With the suggested modification of the threshold for men the students of this group distribute themselves in correlation tables as follows:

Men		Women		Total	
51	34	53	97	104	111
62	1	24	0	86	1

The horizontal line represents the threshold of college ability. Students with satisfactory standing in college (average of C) are placed to the right of the vertical line. In other words, the ratings used enable us to select out of 302 freshmen at entrance 87 individuals (28.8 per cent.) who are unfitted for the first two years of college work, with only one successful student involved in the prediction.

As in the 1921 group there is a positive correlation between the ratings and the length of residence in college. Of the 95 students who left the university for all causes during or at the close of the freshman year 52 had ratings above the threshold and 43 below. The 52 constituted 24.2 per cent. of all those above the threshold, while the 43 constituted 49.4 per cent. of all those below the threshold.

III. *The 1924 Group:* This group included 410 students, 214 men and 196 women. The threshold of college ability was drawn between the ratings 25 and 26 for the women and between 35 and 36 for the men.

The summaries of the correlation tables for freshman scholarship are as follows:

Men		Women		Total	
94	62	82	89	176	151
58		25		83	

At first there were 87 below the threshold of ability, but four of these canceled early without grade. Of the remaining 83 not one attained a satisfactory standing. It remains to be seen whether any will do so later.

Our experience with four classes gives a sufficient answer to the first problem set for solution by these studies. By this procedure we can select from a fairly homogeneous group of entering freshmen a body of students almost all of whom will fall below the required standing in college work. At least 25 per cent. of the whole group and more than half of the eventual failures in the group can thus be distinguished at the time of entrance. This appears to be a much more reliable prediction than can be made by any form of intelligence tests alone, by examinations in content of preparatory sub-

jects alone, by setting a higher than passing grade in high school work as the sole criterion, or by the judgments of teachers or principals.

To be able to select a large part of those students who will fail in college is only a beginning. It is much more important to be able to select those young people who show promise of distinguished success in college and in service to society after graduation. These must be encouraged to enter college in greater numbers. Also, among our present students there are many who fail whose ratings appear satisfactory. Can we distinguish the failures from the successes in this group? Are the failures necessary? Are they predictable? Can any students of the type included here be led to do satisfactory work by proper guidance or by change of conditions?

The group constitutes the upper left quadrant of the correlation tables. Some help toward the classification of these students can be secured by analyzing their ratings in relation to their college marks.

There seems to be no absolute minimum of test rank necessary to success in college. Students in the 1924 group who made a C− or C+ average in their freshman work had test ranks of 18, 17, 14, 11, 10, 9, 5 and 2.[4] The lowest high school rank in the same cases was 52. Other students with C records in freshman work had high school ranks of 32, 29, 28, 26. High-school rank seems to be more significant than test rank at the lower levels. Among D and F students all sorts of rankings are found, but low ranks in either test or high school are more frequent than among C students.

Of more general significance than low ranking is inconsistency or lack of agreement between test rank and high-school rank. Most of the students in the 1924 group who showed a divergence of 30 percentile or more between their test rank and high-school rank made poor records in college. However, if the high-school rank was high the college record was more often satisfactory. When the test rank is very low, below 10, if the student has succeeded in college the high-school rank is found to be very high, usually above 90.

The striking thing about this divergence of test and high-school ranks is that it makes little difference whether the test rank or the high-school rank is the higher. This means that the pupil of good native ability who has loafed in high-school continues to loaf in college. This agrees with the observation of our Students' Work Committee that the students of this type who turn over a new leaf in college are relatively few. Apparently character is formed before the college age. On the other hand, the facts mean that students who have completed the high-school course only by hard work and great industry, although they may have attained a relatively high standing, have reached the limits of their intellectual achievement and they find college work beyond their powers.

Among the students who stand above the threshold of college ability in our combined ratings we may distinguish roughly certain types:

(a) those whose ratings are consistent and fairly high;
(b) those with a considerable spread between high school and test ratings, one being high (approaching 90);
(c) those with a wide spread between ratings, neither being very high;
(d) those with both ratings low, near the threshold;

As there are all possible gradations among the ratings these types do not include all the cases but describe certain groupings which appear to bear some relation to the standing of the students in college. The distribution of these types in their college work at least roughly approximates the following: types *a* and *b* include most of the successful students, who occupy the upper right quadrant of the correlation tables; types *c* and *d* include few successes and represent roughly the upper left quadrant of the tables.

The significance of these observations may be tested by reducing them to tentative formulae and applying them to the groups under study. Such a formula, taking account of the spread between test rank and high-school rank, of consistently low ranks in both high-school and tests and of cases of extremely low rank in either measure, has been applied to the 1924

[4] Some of these are doubtless cases of accident or of indisposition which prevented the student from doing himself justice in the test. These accidents in no way affect the validity of the general method, which is based upon correlation with college work.

group. This tentative rule selects 40 women and 40 men who, if the rule is valid, might be expected to have low records. Of the 80 students 75 did fall below C in the freshman year, two women and two men secured an average of C – and one man made C +. If these cases of error can be eliminated by the use of auxiliary forms of information we can make true predictions in a large majority of the cases of unfitness for college work. Although the data used for the 1921 group are very different in certain details which are important in this immediate connection, the same rule applied to that group selects 50 students, of whom only four graduated and 38 had unsatisfactory records.

These results of inspection of the records are presented, not as having final value, but because they indicate the possibility of recognizing in advance a large part of those students who will fail in spite of apparent good native ability. It is proposed to place under special observation students who fall in the very doubtful class thus described. By placing them in the hands of special counselors we may discover whether they can be stimulated to better performance. If not, we can advise them to seek employment better suited to them.

Other data which have predictive value with reference to college ability may be used in the study of these cases. These include the interests and previous experience and activities of the students themselves, the studies elected in high-school, such character estimates as we can obtain from teachers and others and information about the education and occupation of the parents. While it is too early to reduce the above observations to mathematical formulae it is proposed to study these doubtful cases in the light of all the facts that can be obtained with the double purpose of discovering how to increase the number of true predictions of failure or of distinguished success and how to secure satisfactory work on the part of those who have sufficient ability.

Before we can proceed much further with the development of tests of college ability we must know more about the validity of the college marks with which we correlate our test scores. Here we meet two questions, one as to the general methods of college instruction and general validity of college marks, the other as to the validity of freshman marks in predicting scholarship in the whole college course. An interesting contribution to the latter subject has been made by Professor Bott,[5] who concludes that the student's standing early in his course "is not itself reliable in a predictive sense," and that "if an objective criterion for intelligence-test scores is to be had in terms of academic standing it should be determined in terms not of the early but of the later standing of students."

The study of the performance through four years of a homogeneous group of 432 students gives some measure of the relative validity of the pre-freshman ratings used and the freshman marks. Of the group studied 98 graduated from some college of the university in four years and 17 made four years' progress with satisfactory standing in one or other combined arts and professional course. Every one of these 115 students with clear records had satisfactory ratings at entrance, while 24 of them had not a satisfactory standing (average of C) in their freshman work.

The number whose ratings at entrance were not satisfactory was 112. Of these none graduated and none made four years' progress. The number whose freshman marks were not satisfactory was 277. Of these 25 graduated or made four years' progress. However, 171 students who secured less than one half honor point per credit carried in the freshman year did not graduate or make four years' progress. Four of these brought their standing up to an average of C.

A tabulation of the changes in the average marks of the members of the whole group shows that 114 students raised their average after the freshman year and that in 43 cases the improvement brought the student from below C to an average of C or higher. On the other hand 55 students lowered their average marks, and 20 of these lost their standing of C. The remainder of the 432, namely 263, made no change in their average mark equal to one half honor point per credit.

The following table tells the story of the 112 students who were below the threshold in their rating at entrance.

[5] *Journal of Educational Research*, September, 1925.

Residence	Average marks	Men	Women	Total
6 quarters or less	below C	42	17	59
between 6 and 12 quarters	"	25	5	30
ditto	C−	4	1	5
12 quarters or longer	below C	10	6	16
ditto	C−	1	2	3

None had made full four years' progress and none had graduated.

From these statements it appears that the marks of the freshman year would enable us to select a larger number of students who would not succeed in four years of college work than we have thus far been able to select by means of the combined ratings used at entrance. When the predictive measures are more fully worked out along the lines suggested above they will probably give fully as large a true prediction as the freshman marks. The advantages of the pre-freshman ratings are the saving of time, expense and discouragement on the part of the student and the better use of resources on the part of the institution. In the matter of predicting high scholarship the pre-freshman ratings are a somewhat better guide than the freshman marks.

The problem of predicting high scholarship is rendered somewhat easier by the foregoing discussions. For practical purposes distinguished students may be identified with those who secure average marks of B in their college course. In our 1921 group among those who graduated or made four years' progress there were 26 B students, of whom four rose from a C standing and one from a D standing in the freshman year. On the other hand, seven C graduates fell back from a B− standing in the freshman year. In this 1921 group the total number of B students, whatever the period of their residence, was thirty-three. These were distributed among the four types above discussed as follows: seventeen in *a*, thirteen in *b*, two in *c* and one in *d*. Seven of these were not B students in the freshman year. In the 1923 group there are 19 B students in two years work, 16 of whom fall in type *a* and three in type *b*. From this it seems that we can at least recognize in advance the group of students among whom distinguished students will appear.

In a state university it is necessary not only to work out methods of prediction but also to find ways of profiting by this information after it is obtained. In Minnesota, through the cooperation of the high-school authorities and with the very sympathetic support of the public press, we have made a beginning. In May, 1925, we gave the college ability tests to the senior classes of all high schools in the two cities and in June we sent letters to the parents of all who took the tests, telling them what we were doing and how true the predictions had proved in our experience, and advising that an average rating above 75 percentile should be considered a strong argument for sending the children to college, while a rating below 35 for men and 25 for women should be regarded as a strong argument for placing them in some other occupation. Every effort was made to present the matter in such a way as to gain the confidence and support of parents. In no case has any resentment been expressed or any question raised as to the value of this information and the propriety of our giving it directly to the parents and pupils concerned. That some effect has been produced is evidenced by the fact that in 1924 we received 87 students who fell below the thresholds mentioned and in 1925 we received 68 such students. The registration from the two cities in 1925 shows a somewhat larger proportion coming from the higher levels of high-school scholarship than in the three years previous. Of still further significance is the fact that there has been an increase of freshman registration of 173 over that of 1924, but a slight decrease in the number of freshmen coming from the two cities. In view of the change in the proportion coming from higher and lower scholarship levels this means that under ordinary conditions we should have had not 68 but 100 or more students who were certain to fail in their college work. In other words, 30 or more young men and women have been saved the discouragement of failure and have gained time and experience in some other occupation.

Now what have we accomplished? We have found what we started out ten years ago to find—a method of measurement that would enable us to predict in the case of individuals, not only in the mass. We can say that each individual student with a rating below the

threshold fixed each year after a study of the conditions prevailing that year will fall below C in college and that among those so selected scarcely more than one in a hundred will prove successful.

Second, we have here a procedure which can be presented to students, to their parents and to the general public in such a manner as to meet with understanding and acceptance. When we deal only with actual facts proven in several years of experience it is possible to make parents believe that we are advising them for their children's good.

Third, we have here a procedure by which promising college students can be recognized and by which the instruction in the various divisions or courses in the college can be made to render to society the greatest service.

Fourth, we have here the beginning of methods for the selection of those who are promising for vocational training, for mechanical or clerical work, for salesmanship, and the like.

Fifth, we have here the ground for active selection and encouragement of many highly promising students who do not come to college.

Sixth, we have here a foundation for a rational treatment of causes of college failures. Alleged causes for failure have usually been based on intuitive judgment. When judgment about a student is formed from personal conference without any scientific inquiry to ascertain the real facts there enter into the conclusions too much of the subjective state of the student and too much of the emotional attitude of the observer. The boy who thinks that the outside work which he must do to earn expenses is the cause of his failure is giving no more time and effort to that work than many others are giving who are good students or honor students and who take part in college activities besides. The boy whose failure is attributed to the fact that his father gives him too much money was spoiled long before he came to college. The facts resulting from systematic impersonal study, such as are cited in this article and in the work of many others, are to be explained on no other ground than that success in college is determined by mental ability and moral character. Then mental ability is inherited. The qualities of character which make for success are also inherited capacities and traits influenced by experience, training, discipline, habits. The moral character is well founded before the student comes to college. This does not relieve college faculties of the duty to use every possible means for the correction of faults of character wherever native mental ability justifies the student's effort to secure college training. When the mental ability is lacking, the duty of the faculty is to try to place the student in an occupation suited to his capacity. This procedure is no less sympathetic than that of the personal and intuitive adviser and no less satisfying to our human desire to be helpful. We can be most helpful when we understand the facts and when we bring the student to face the facts. By this means we can place the student where he can be most successful. And that is where he will be most happy.

Seventh, we have here firm ground for the selection of those students who should be offered the services of special counselors. We can distinguish those students who will fall in the upper left quadrant of these charts. These students are our chief problem. If we can stimulate the capable ones to intelligent efforts they will do satisfactory work. When our best efforts fail to stimulate such a student we can send him home. When careful investigation shows that a boy is suffering from hopeless mediocrity in the rôle of college student we can seek to place him in industry at the level of his ability. When we know who the students are who will fall naturally in this upper left quadrant we can train our efforts on them with good hope of solving their problems.

Finally the procedures here described are to be regarded as the statistical basis of selection and guidance. When they are supplemented by information about the qualities of character and other factors which affect the success of students they will be both more accurate and more humanly considerate and sympathetic in their results. The end to be gained is the guidance of each student so far as possible into that line of effort in which his native ability will find its most complete expression.

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